Demography and Storage Systems During the Southern Levantine Neolithic Demographic Transition

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Abstract Despite its importance in understanding the forager–farmer transition, remarkably little recent research has explored the role of food storage and changes in food production as a foundation for the NDT. Drawing on data from the southern Levantine Neolithic, in this chapter I make two arguments. First, while significant, the NDT in the southern Levant was gradual, and it appears that the major period of growth occurred ca. 1,200 years after the appearance of domesticated plants. Second, rather than focusing on plant domestication as the defining catalyst of the NDT, these data highlight the importance of food storage based on wild foods that facilitated greater sedentism. In the southern Levant, there is clear evidence that the subsistence and nutritional foundation for the NDT appeared several thousand years before the appearance of domesticated plants.

Keywords Food Storage · Pottery Neolithic Periods · Natufian

…whenever resources are highly seasonal, sedentarism and large-scale storage imply each other: storage brings forth sedentarism, and sedentarism presupposes storage (Testart 1982: 524).

The Near Eastern Neolithic Demographic Transition: Exploring Changes in Demography and Food Storage

The transition in food production from collecting wild resource to reliance on farming of domesticated plans and animals represents the major social and economic transition in human prehistory. While it has long been noted that population increases were linked to the Neolithic revolution it is only relatively recently that direct explicit research has focused on demography. Focused on north and central Europe, Bocquet-Appel (2002) argues that European Mesolithic and Neolithic cemeteries illustrates a two-phase demographic transition in what is now known

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as the Neolithic Demographic Transition (NDT for short). In the initial phase of the Mesolithic (or Epipaleolithic, and more specifically Early and Late Natufian, if one is focusing on the Levant) to Neolithic transition we see a shift from a quasi-homeostatic equilibrium in birth rates to a much higher birth rate. Bocquet-Appel hypothesizes that this was linked to improved dietary conditions with the introduction of grains, and eventually, the adoption of dairy products (Bocquet-Appel 2002:647). It is hypothesized that after 500–1,100 years an increase in mortality would cause a return to quasi-stationary equilibrium. It is important to note that the highest birth rate (from his samples this represents at rate of 1.24%) occurs between 300 and 800 years after the appearance of domesticates.

Other demographic studies have sought to expand our understanding into new geographical areas and different topics, directing new attention to the demographic links to settlement systems (Bandy 2004), and changes in agricultural labor and subsistence (Eshed et al. 2004). Other studies of settlement and mortuary changes in a mixture of primary and secondary domestication contexts in the Americas (see Bandy 2006; Bocquet-Appel and Naji 2006), and European case studies (e.g., Bocquet-Appel 2002) based on secondary diffused Neolithic economic and technological packages, have yet to resolve if the magnitude and overall timing of the NDT is the same in case studies characterized by the diffusion of farming into new regions compared to regions of primary agricultural origins such as the Near East.

As noted at the start of this chapter, Testart (1982) has forcefully argued that food storage, population growth, sedentism and social inequality are often interlinked. As outlined elsewhere (Bellwood 2005, Bar-Yosef and Meadow 1995; Read and Le Blanc 2003), with greater sedentism, increased birth rates and increased quality and quantity of domesticated foods we see the foundation for dramatic social and cultural developments.

Additional research (Stopp 2002; Ingold 1982) has shed new light on the use of storage among hunter-gatherers: storage is both compatible with nomadic movement, and in some contexts, actually furthers highly mobile settlement systems. While Testart (1982) is largely correct in identifying the potential social and economic byproducts of the use of storage systems, other researchers (Hayden 1982; Ingold 1982:531) convincingly argued that in some situations permanent settlement with agriculturalists, tied to intensive storage, still requires women to move from residential to field areas. From this perspective food storage does not always result in reduced physical stress during the seasons where active fieldwork and harvesting are required, although clearly it does result in an overall decrease. While there is disagreement as to the links between food storage and population growth among researchers (e.g., Hayden 1981; Ingold 1983; Testart 1982), there is general agreement that while food storage may not directly result in population growth, significant population growth is largely predicated on intensive agriculture and food storage.

This chapter is focused on the unexplored intersection of Neolithic food storage and demography, and is grounded on the assumption that the development of storage technologies is critical aspect of population growth, such as witnessed with the NDT. Focusing on the southern Levant with the gradual transition from collector-foragers to foraging-farming economies, I examine current modeling of the NDT